

**Paper Reference 31760H**

**Pearson BTEC**

**Level 3 Nationals**

**Total Marks**

**Extended Certificate, Foundation Diploma,**

**Diploma, Extended Diploma**

**INFORMATION TECHNOLOGY**

**UNIT 1: INFORMATION TECHNOLOGY**

**SYSTEMS**

**Thursday 6 June 2019 – Morning**

**TIME: 2 hours plus your additional time allowance.**

**In the boxes below, write your name, centre number and candidate number.**

<b>Surname</b>							
<b>Other names</b>							
<b>Centre Number</b>							
<b>Learner Registration Number</b>							

**X61589A**

## **ITEMS INCLUDED WITH QUESTION PAPER**

- **A separate Data Booklet.**

## **INSTRUCTIONS**

- **Use BLACK ink, BLACK ball – point pen, BLACK felt tip or your usual method.**
- **Write your name, centre number and learner registration number on the front cover.**
- **Answer ALL questions.**
- **Answer the questions in the spaces provided in this Question Paper or in the Data Booklet – THERE MAY BE MORE SPACE THAN YOU NEED.**

## **INFORMATION**

- **Total mark for this paper is 90.**
- **The marks for EACH question are shown in brackets – USE THIS AS A GUIDE AS TO HOW MUCH TIME TO SPEND ON EACH QUESTION.**

## **ADVICE**

- **Read each question carefully before you start to answer it.**
  - **Try to answer every question.**
  - **Check your answers if you have time at the end.**
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**ANSWER ALL QUESTIONS.**

**WRITE YOUR ANSWERS IN THE SPACES PROVIDED.**

**1. Edie is a student at Wigmore College.**

**She is working with other students on a project to investigate the effects of plastics on the environment.**

**All students have internet access and use a wiki as their online method of collaboration.**

**(a) Explain TWO benefits of using a wiki to collaborate with other students.**

**(4 marks)**

**BENEFIT 1** \_\_\_\_\_

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**Turn over**

**BENEFIT 2** \_\_\_\_\_

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**Question 1 (b) is on the next page.**

1. (b) Explain TWO drawbacks of using a wiki to collaborate with other students.

(4 marks)

**DRAWBACK 1** \_\_\_\_\_

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**DRAWBACK 2** \_\_\_\_\_

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**Turn over**

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- 
1. (c) Wigmore College should ensure that computer workstations are designed to minimise health risks.

Explain TWO factors the college should consider when designing computer workstations in order to minimise health risks.

(4 marks)

FACTOR 1 \_\_\_\_\_

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**FACTOR 2** \_\_\_\_\_

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**Question 1 (d) is on the next page.**

1. (d) Edie has bought a laptop to use when working at home.

She has been advised that she should set up a firewall to protect the data on her laptop.

Describe how a firewall works to protect data on the laptop.

(4 marks)

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**Question 1 (e) is on the next page.**

1. (e) Edie is considering purchasing a suite of office productivity applications for the laptop rather than purchasing individual applications.

**Discuss the implications of this purchase.**

**(8 marks)**

[illegible]

**Turn over**



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**(TOTAL FOR QUESTION 1 = 24 MARKS)**

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**Question 2 is on the next page.**

**Turn over**

2. Richard is a football trainer. He has set up a company offering training and competitions for footballers of all abilities, aged 16 and over.

He would like to create a website that will:

- advertise training facilities
- advertise competitions
- collect personal details of players
- allow players to book training events and enter competitions.

The website must be accessible to all users.

- (a) Describe TWO accessibility features that should be included in the website.

(4 marks)

FEATURE 1 \_\_\_\_\_

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Turn over

FEATURE 2

Question 2 (b) is on the next page.

Turn over

2. (b) Personal details of players will be entered into an online data collection form.

Look at **Figure 1** for Question 2 (b) in the separate Data Booklet.

**Figure 1** shows part of a completed data collection form.

It is important that the data collected is error free.

- (i) Validation is used to minimise errors in the data collected.

Explain what is meant by the term 'validation'.

(2 marks)

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2. (b) (ii) Describe a validation rule that could be used for each of the following:

(4 marks)

**Date of birth**

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**Email address**

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2. (b) (iii) Describe ONE OTHER technique that could be used to minimise errors in data entry.  
(2 marks)

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2. (c) The online booking system should allow players to book training events and enter competitions.

The system should be easy to use and accessible for all users.

Discuss the factors, other than ease of use and accessibility, that Richard should consider when creating the online booking system.

(8 marks)

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**(TOTAL FOR QUESTION 2 = 20 MARKS)**

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**Question 3 is on the next page.**

**Turn over**

### **3. ERS Trading sells sports goods.**

**It sells goods online and in high street stores.**

**The company offers a ‘click – and – collect’ service for online customers.**

**Customers using the ‘click – and – collect’ service nominate a store for collection.**

**On receipt of an online order the availability of stock in the warehouse is checked.**

**Items, that are not available, are ordered from suppliers.**

**Available items are despatched to the nominated store.**

**Items not collected by the customer within 14 days are returned to the warehouse.**

**Emails are sent to the customer when:**

- the item is despatched to the nominated store**
- the item is ready for collection in – store**
- items have not been collected by the customer within 7 days.**

3. (a) On the blank space provided for Question 3 (a) in the separate Data Booklet, draw a flow chart to show the process for **‘click – and – collect’** ordering.

(6 marks)

- (b) Philippe is the manager of one of the larger ERS Trading stores and is concerned about the amount of time customers spend queuing to pay for goods.

- (i) Describe ONE way Philippe could use data modelling to help him solve the problem.

(4 marks)

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**Question 3 (b) (ii) is on the next page.**

3. (b) (ii) Explain TWO implications of using a data model to solve this problem.

(4 marks)

IMPLICATION 1 \_\_\_\_\_

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IMPLICATION 2 \_\_\_\_\_

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3. (c) Online customers pay using debit cards.

It is essential that their payment details  
are kept secure.

Describe the protocols used to govern data  
transmission for secure payment systems.

(4 marks)

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**Question 3 (d) is on the next page.**

3. (d) ERS Trading operates a customer loyalty card scheme for both online and in – store purchases.

Customers can benefit from the use of transactional data collected through loyalty card schemes. Some customers believe that the drawbacks of using the scheme outweigh the benefits.

Analyse the benefits and drawbacks for customers of the use of transactional data collected through loyalty card schemes.

(6 marks)

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**(TOTAL FOR QUESTION 3 = 24 MARKS)**

**Turn over**

4. **Frederick's Agency is a chain of accountants. Some accountants are based in a main office, others work from home.**

**The agency has a range of clients, including small and medium – sized businesses.**

**The main office has a server – based Local Area Network (LAN), which can be accessed via Ethernet cabled PCs or remotely via a company Virtual Private Network (VPN).**

**The server provides access to all application software and company data.**

**Company data is currently backed – up to a cloud – based storage system.**

**The agency is pleased with the cloud – based back – up and is considering using cloud storage and computing for all its IT systems.**

**The agency believes this will be cost effective.**

**Question 4 (a) is on the next page.**

4. (a) Evaluate the cost implications for Frederick's Agency of a move to cloud storage and computing.

(12 marks)

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**Question 4 (b) is on the next page.**

4. (b) The moral and ethical factors of the use of IT systems has implications for the running of Frederick's Agency.

Discuss the implications for the agency and its staff of the moral and ethical factors of the use of information technology.

(10 marks)

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**(TOTAL FOR QUESTION 4 = 22 MARKS)**

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**TOTAL FOR PAPER = 90 MARKS**

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